

**ABSTRACT OF THE DISCLOSURE**

Disclosed is an apparatus and method for modeling and estimating the characteristics of a power amplifier with memory. A predistortion module  
5 generates a predistorted signal in response to coefficients of a complex polynomial representative of the amplifier and to an input signal. A power amplifier receives time-spaced samples of the predistorted signal and generates an output signal. A polynomial module updates the coefficients of the complex polynomial in response to a current sample of the output signal and to the time-  
10 spaced samples of the predistorted signal. In particular, the complex polynomial is implemented with both even and odd terms.

T02090"27/92860